Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TANAKA HATSUYUKI, MITSURU SATO,
TOSHIMASA NAKAYAMA and HIROSHI KOMANO

Appeal No. 1997-3416
Application No. 08/339,440

ON BRIEF

Before, WARREN, WALTZ and KRATZ, Administrative Patent Judges.
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claim 16, as amended after final rejection. No other claims are pending in this application.

BACKGROUND

Appellants' invention relates to a developer solution for an actinic ray sensitive resist layer. The solution includes an aqueous solvent, a nitrogen-containing organic base compound and an anionic surface active agent comprising a diphenyl ether compound of the formula specified in claim 16.

A further understanding of the invention can be derived from a reading of claim 16, the sole claim on appeal, which is reproduced in an appendix to this decision.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Hashimoto et al. (Hashimoto)	4,610,953	Sep. 09, 1986
Matsumoto et al. (Matsumoto)	4,762,771	Aug. 09, 1988
Philip	1,367,830	Sep. 25, 1974

Patent Specification, United Kingdom (BP '830)

Claim 16 stands rejected under 35 U.S.C. § 103 as being unpatentable over BP '830 in view of Hashimoto and Matsumoto.

OPINION

We have carefully reviewed the specification, the claim, and the respective positions presented by appellants in their brief and the examiner in the answer thereto. In so doing, we find ourselves in agreement with appellants' basic contention that the applied prior art fails to establish the prima facie obviousness of the claimed subject matter. Accordingly, we will not sustain the examiner’s rejection for the reasons as follows.

In rejecting the claim under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, such as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

BP '830 is relied upon by the examiner for disclosing a developer solution comprising an aqueous solution including tetramethyl ammonium hydroxide in an amount corresponding to the claimed nitrogen-containing organic base compound

constituent of appellants' claim and a surfactant, such as ammonium alkyl polyether sulfate (answer, page 3). The examiner acknowledges that BP '830 does not disclose the diphenyl ether compound of the formula required by appellants' claim (answer, page 3).

To allegedly remedy the admitted deficiency of BP '830, the examiner relies on the teachings of Hashimoto and Matsumoto. According to the examiner, Hashimoto discloses that developing solutions used in silicon based semi-conductor manufacturing should not include alkali metals. The examiner further argues (answer, page 4):

> [i]t is also well-known in the surfactant art that alkyl diphenyl ether disulfonates are equivalent to alkyl polyether sulfates, as anionic surfactants, as disclosed by Matsumoto et al. (Col. 4, lines 61-68).

We disagree. Matsumoto, together with the other applied references, furnishes insufficient evidence to establish the general equivalency of alkyl diphenyl ether disulfonates and alkyl polyether sulfates as anionic surfactants. Rather, Matsumoto discloses several surfactants at column 4, lines 61-64 of the patent, which are taught as alternatives for assisting in the uniform application of the treating solution

of Matsumoto that contains a phytic acid component and an aminobenzenesulfonic acid. Matsumoto teaches that the treating solution is used after a development step, and prior to a burning-in treatment of a photosensitive lithographic plate to prevent background stains (column 3, lines 37-68).

Here, we note that the examiner does not specifically address or satisfactorily explain why one of ordinary skill in the art would regard the teachings of surfactant alternatives for the particular treating solution of Matsumoto to be applicable to the disparate developer solution of BP '830 from the combined references' teachings.

Perhaps more significantly, the examiner has not pointed out any teaching of any of the references that suggest an anionic surface active agent that would be embraced by appellants' claim. In this regard, we note that the alkyl diphenyl ether disulfonates generically referred to by Matsumoto do not particularly suggest a diphenyl ether compound having an ammonium sulfonate group and that is further limited by the formula of the appellants' claim 16. The examiner has not established where the references furnish a suggestion or motivation for selecting an anionic surface

active agent of the type as herein called for. The examiner must identify a particularized suggestion, reason or motivation to combine references or make the proposed modification in a manner so as to arrive at the claimed invention.

In this regard, "evidence of a suggestion, teaching, or motivation to modify a reference may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be

solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg. v. SGS Imports Intern., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although 'the suggestion more often comes from the teachings of the pertinent references.' Rouffet, 149 F.3d at 1355, 47 USPQ2d at 1456 (Fed. Cir. 1998). The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998)." In re Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617 (1999). A broad conclusory statement regarding the obviousness of modifying a reference, standing alone, is not "evidence." See, e.g., McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993); In re Sichert, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977).

Hence, we agree with appellants (brief, pages 7-11) that the examiner has not established that the applied references, even if they were combinable, furnish sufficient evidence to teach or suggest the claimed subject matter. Accordingly, on

the record of this appeal, it is our view that the examiner has not carried the burden of establishing a prima facie case of obviousness with respect to the subject matter defined by the appealed claims.

CONCLUSION

The decision of the examiner to reject claim 16 under 35 U.S.C. § 103 as being unpatentable over BP '830 in view of Hashimoto and Matsumoto is reversed.

REVERSED

CHARLES F. WARREN Administrative Patent Judge	)	
THOMAS A. WALTZ Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
PETER F. KRATZ Administrative Patent Judge	)	

PFK/sld

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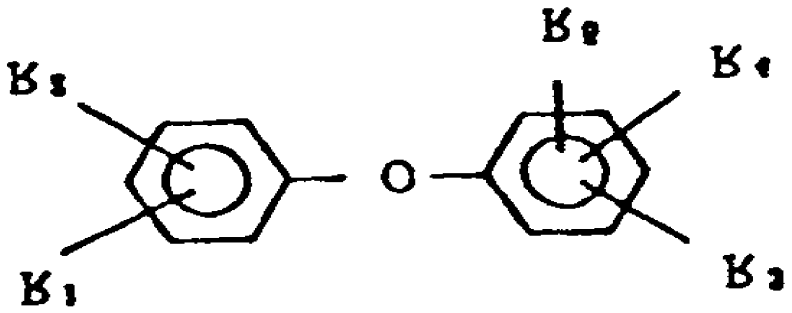
Appendix

16. A developer solution for an actinic ray-sensitive resist layer which comprises:

(a) water or a liquid mixture mainly composed of water as a solvent;

(b) a nitrogen-containing organic basic compound dissolved in said solvent in a concentration of from 1 to 5% by weight; and

(c) an anionic surface active agent which is a diphenyl ether compound represented by the general formula:



in which R^1 is an alkyl or alkoxy group having 5 to 18 carbon atoms, R^2 is a hydrogen atom or an alkyl or alkoxy group having
5 to 18 carbon atoms, R^3 is an N-substituted or unsubstituted ammonium sulfonate group of the general formula $-SO_3NH_4$, and R^4 and R^5 are each a hydrogen atom or an N-subsitited or unsbsititued ammonium group of the general formula

$$-SO_3NH_4,$$

and R^4 and R^5 are each a hydrogen atom or an N-substituted or unsubstituted ammonium sulfonate group of the general formula $-SO_3NH_4$, dissolved in the solvent in a concentration in the range from 0.05 to 5% by weight.